

CLAIMS.

1. Device converting thermal energy into kinetic one, related to the group of machines using four-phase basic thermodynamic cycles and converting thermal energy into kinetic one by means of an available outside heat source, c h a r
05 a c t e r i z e d by the fact that it uses rarefied gas in a novel three-phase
cycle, of which the first phase is a spontaneous isothermal gas aggregation
(0---1)), equivalent to ideal isothermal compression, the second phase is an
adiabatic expansion(1---2), producing work, via a gas turbine (5), at the
expense of the internal thermal energy of the gas and the third phase is an
10 isobaric expansion (2----0), where the expanded gas is re-heated, via a heat
exchanger (6), while cooling the ambient air (7). Phase (0---1) is accomplished
when the gas passes through numerous special microscopic holes (4) with sizes
comparable to the mean free path of the molecules and with smart geometric
shapes, ie slot(26) and cone(27) with diverging inner surfaces, cavity(28) with
15 segments of concave spherical surfaces, or the like, grouped together in small
parallel modules, allowing the gas to take advantage of a peculiar property of the
molecular layer adsorbed upon the inner walls of the holes, which layer slightly
diverts the (normally) uniform rebound of the molecules towards directions
more close to the perpendiculars to the inner surfaces, with the net result that a
small but discrete amount of gas is passing through the holes spontaneously,
achieving an aggregated output.

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